ΕΔΕΥ

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Beyond the Search for Hydrocarbons in Greece

Hellenic Hydrocarbon Resources Management SA

Yannis Bassias, President and CEO

First Annual Eastern Mediterranean Energy Leadership Summit

October 1-2, 2019 | Divani Apollon Palace & Thalasso, Greece

Zoom on Greek acreage onshore and offshore

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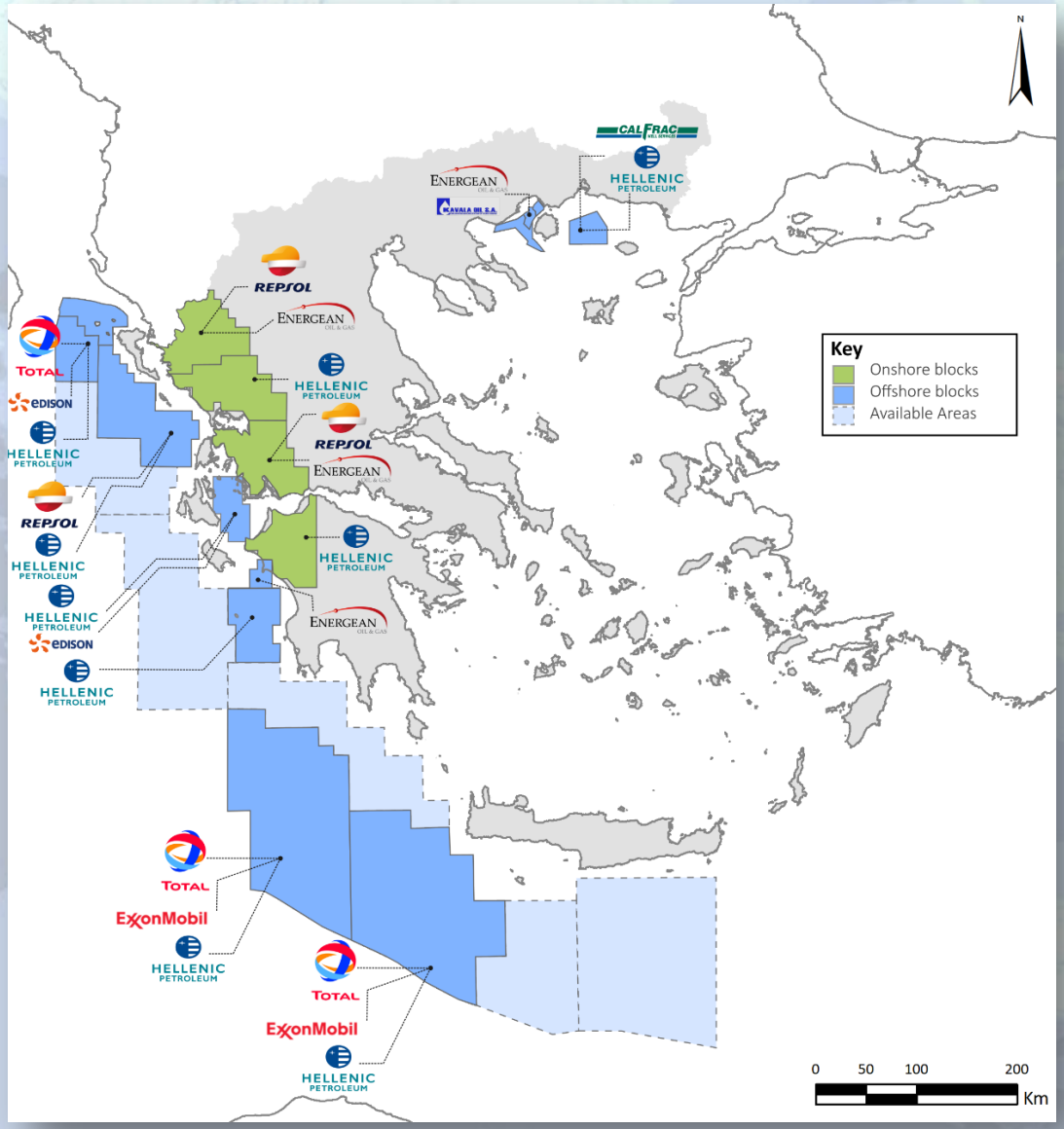
update October 1st 2019



Greece in the Eastern Mediterranean

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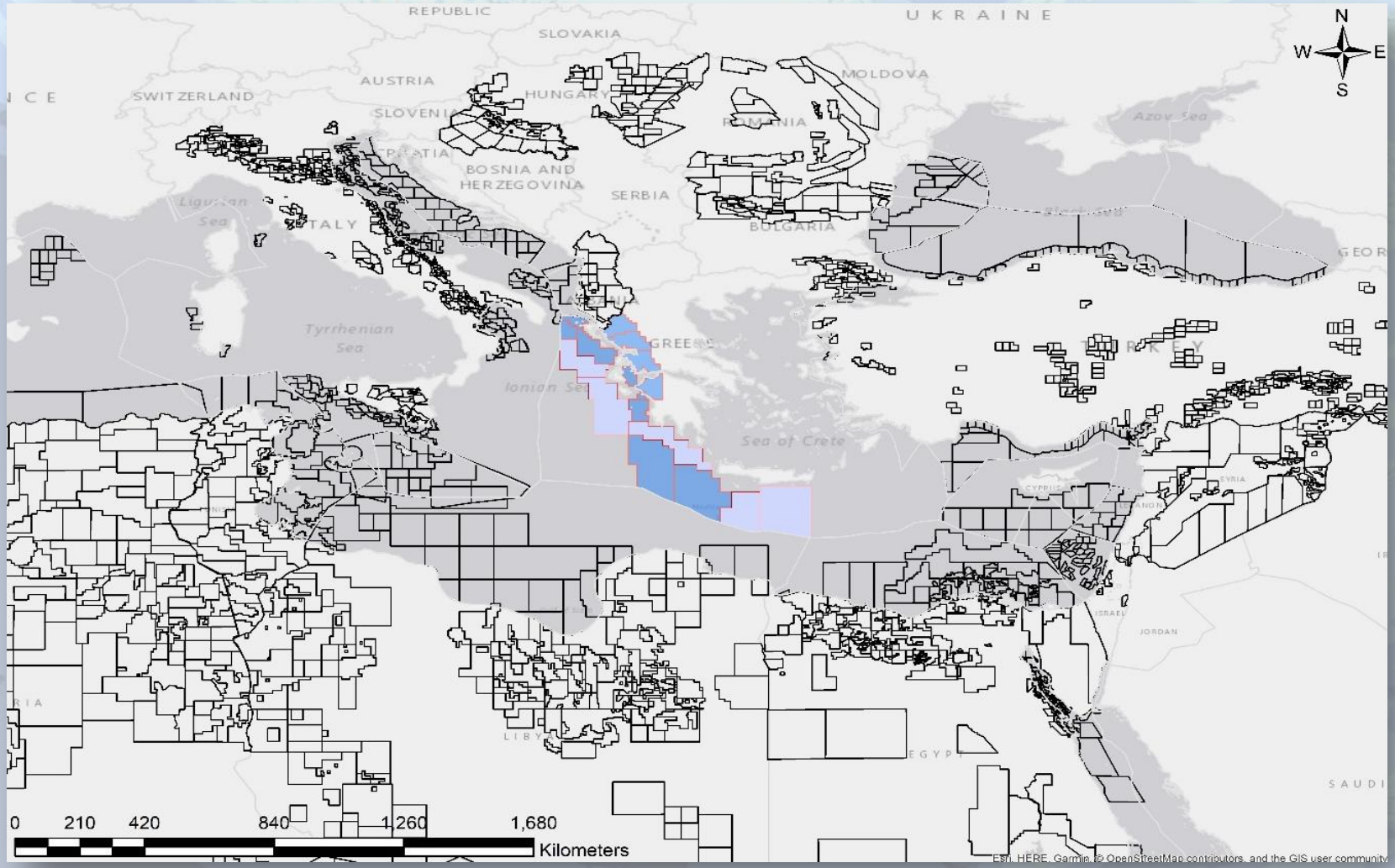

The gas tiles of Eastern Mediterranean and Black Sea

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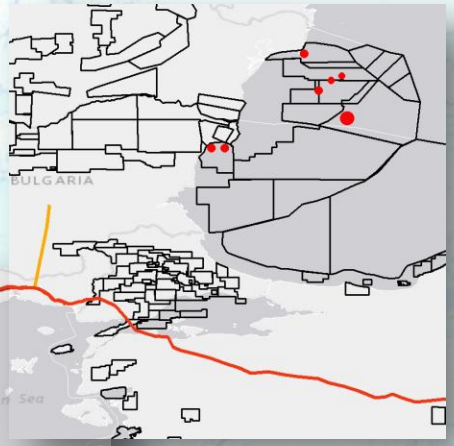
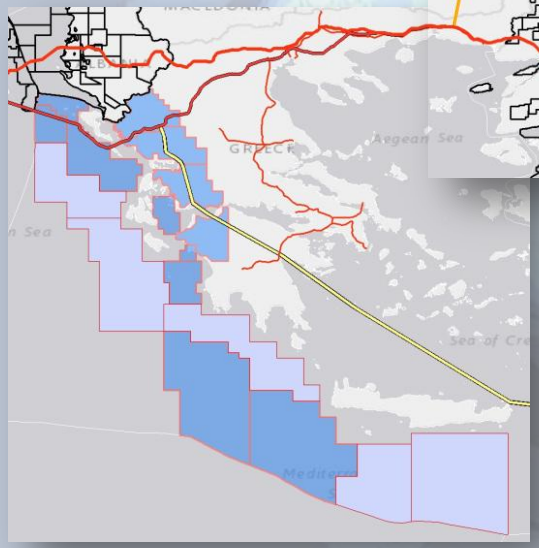
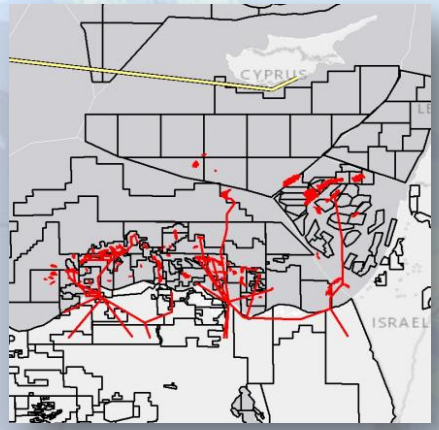


Recent gas discoveries



Expected gas discoveries



Recent gas discoveries and gas production

Nile delta

Eastern Mediterranean and Black Sea

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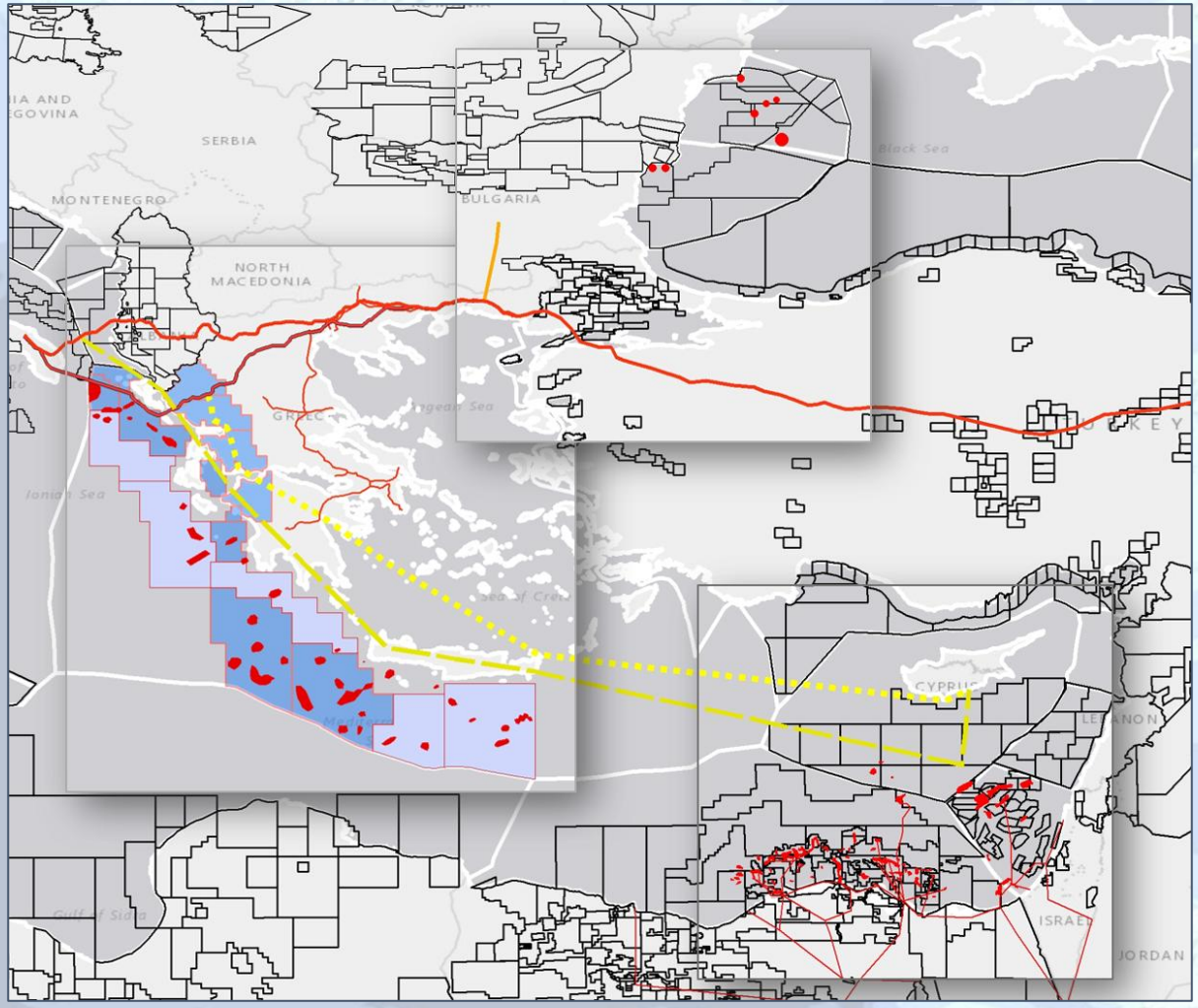
Fields discovered

Prospects to be explored



Fields Discovered and Producing

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Convergence of five technical and economic reasons

Recent large discoveries of gas in the SE Mediterranean and Black Sea

New geological concept model added since 2015 in the Mediterranean

Progressive improvement of deep and ultra-deep drilling technologies

Increasing commercial importance of natural gas

Diversification of gas supply for the European market

Deep water, gas plays and time agenda for ultradeep waters

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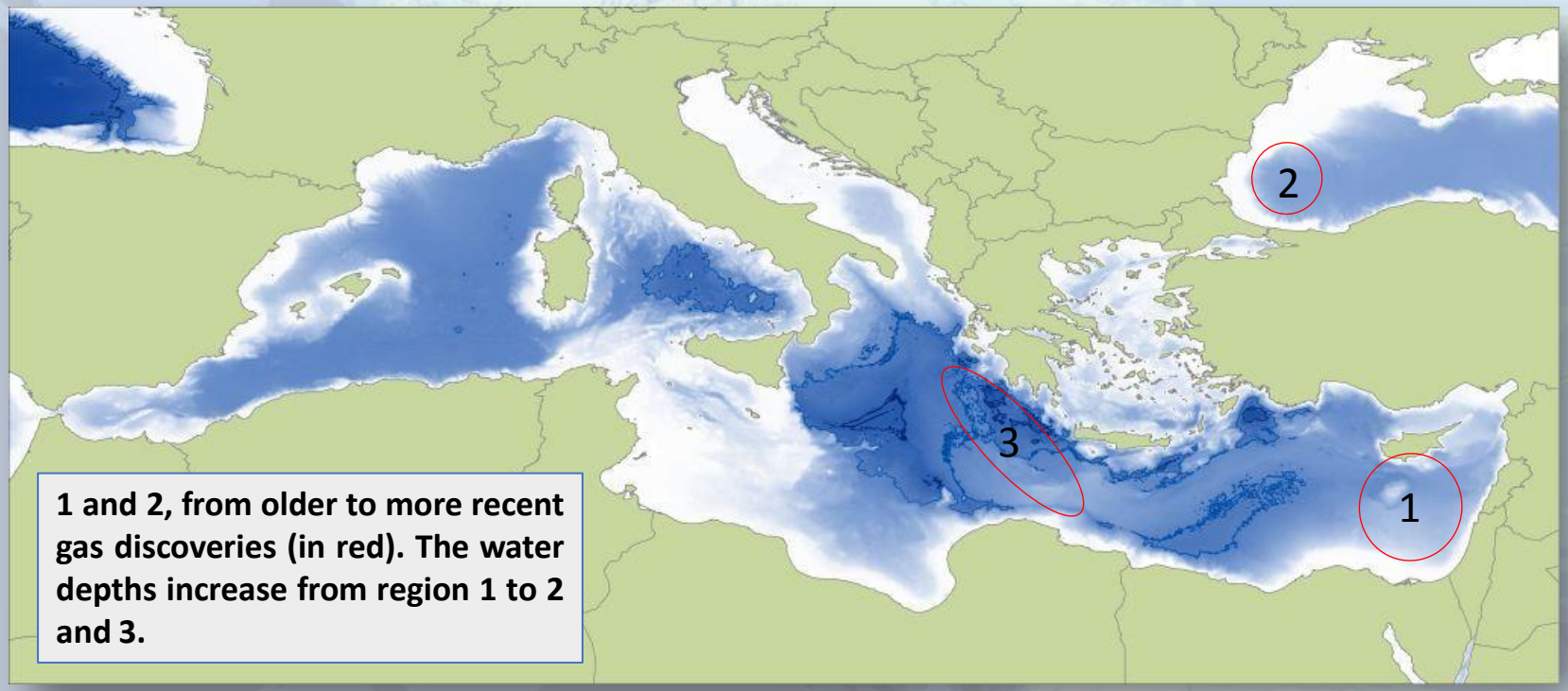

1 and 2, from older to more recent gas discoveries (in red). The water depths increase from region 1 to 2 and 3.

New geological concept model added since 2015

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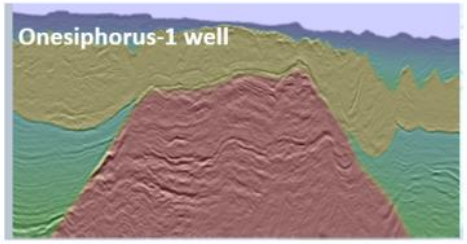

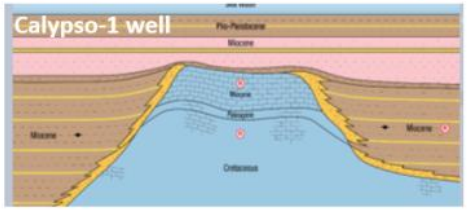

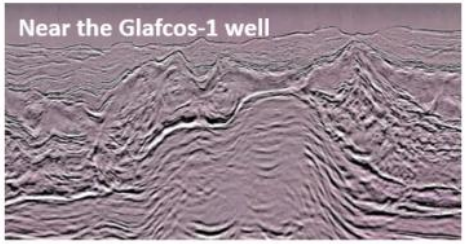

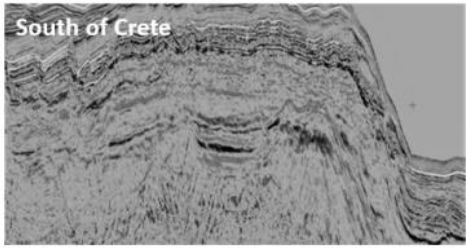

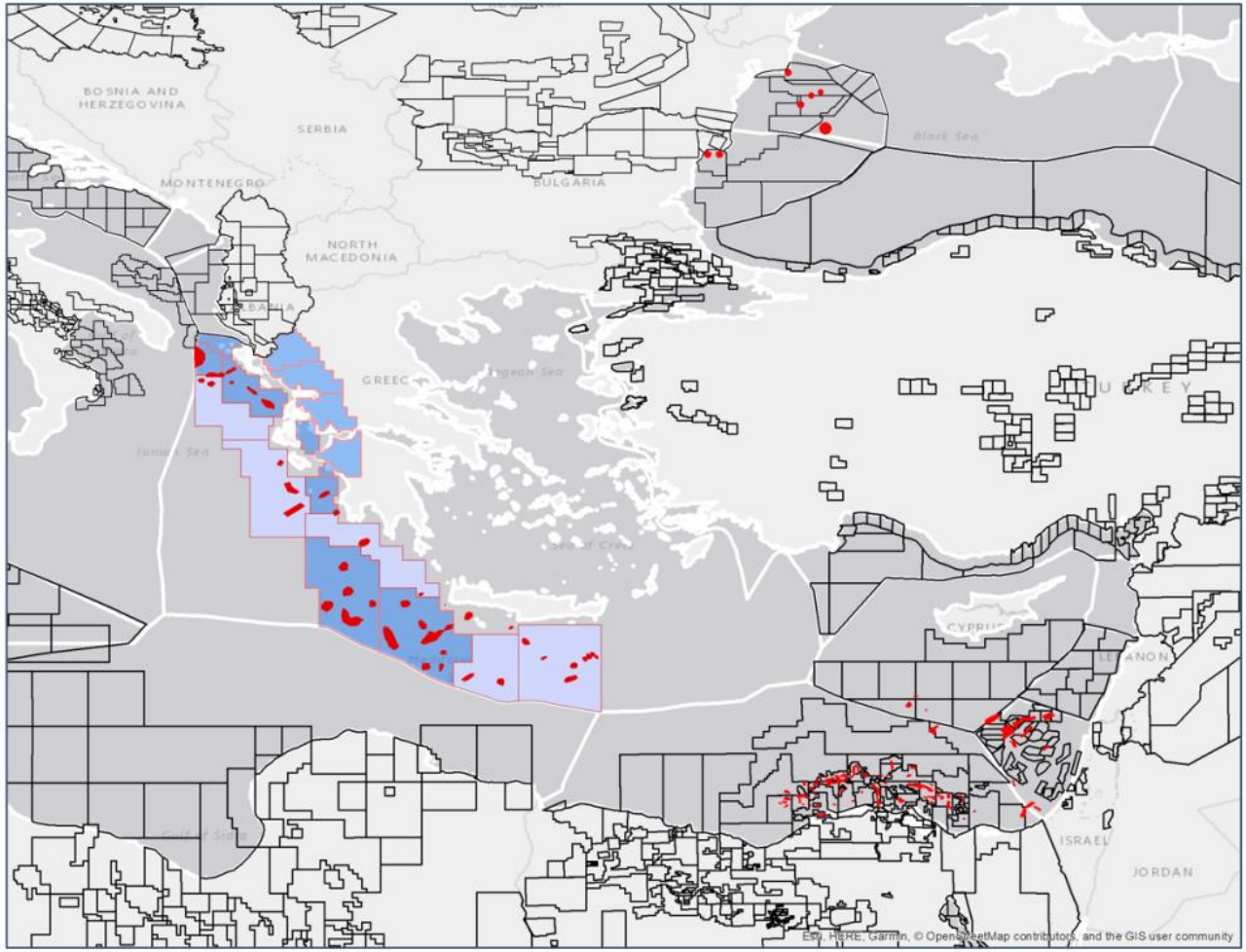

If you take out 3000 meters of water

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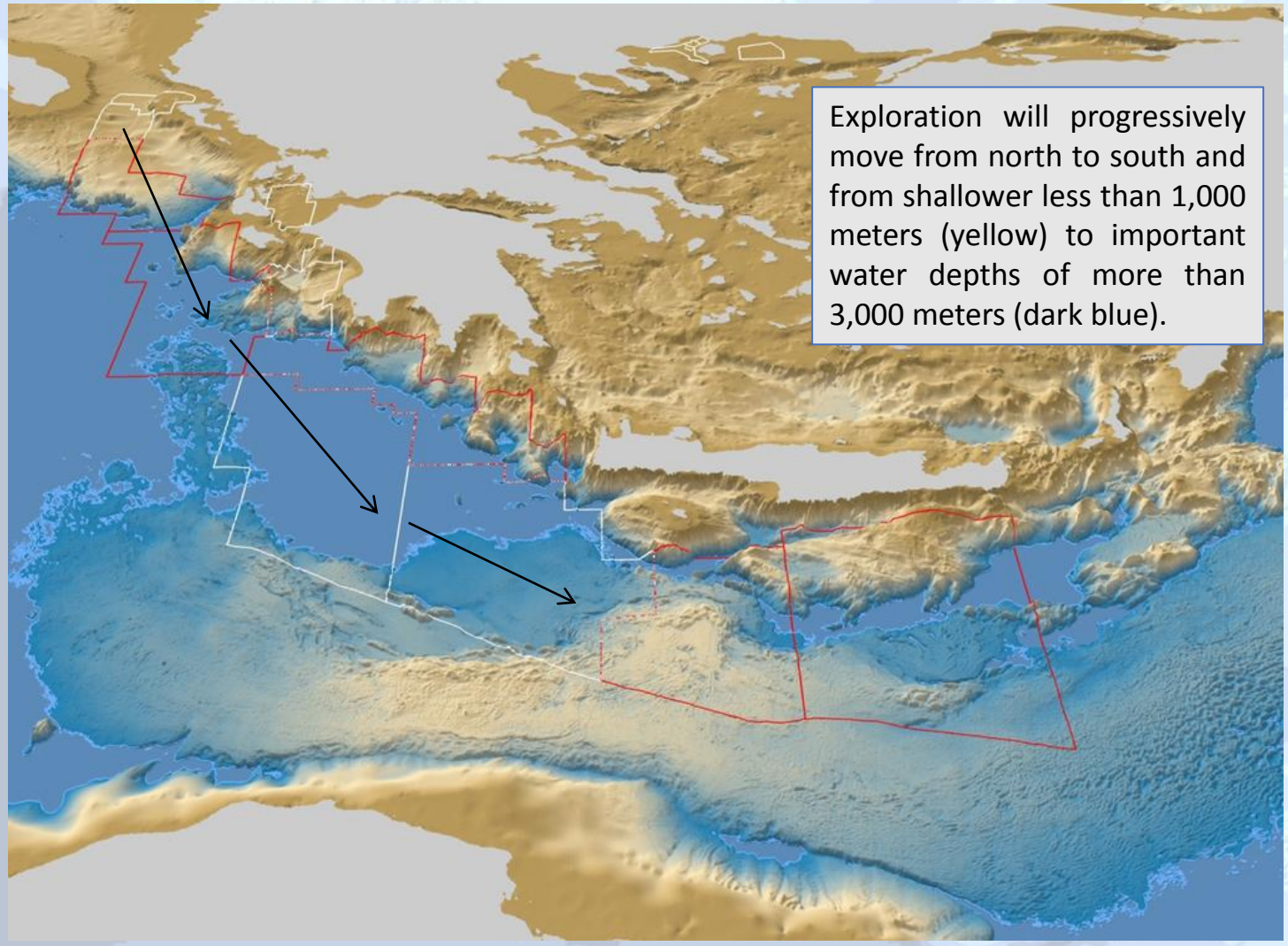
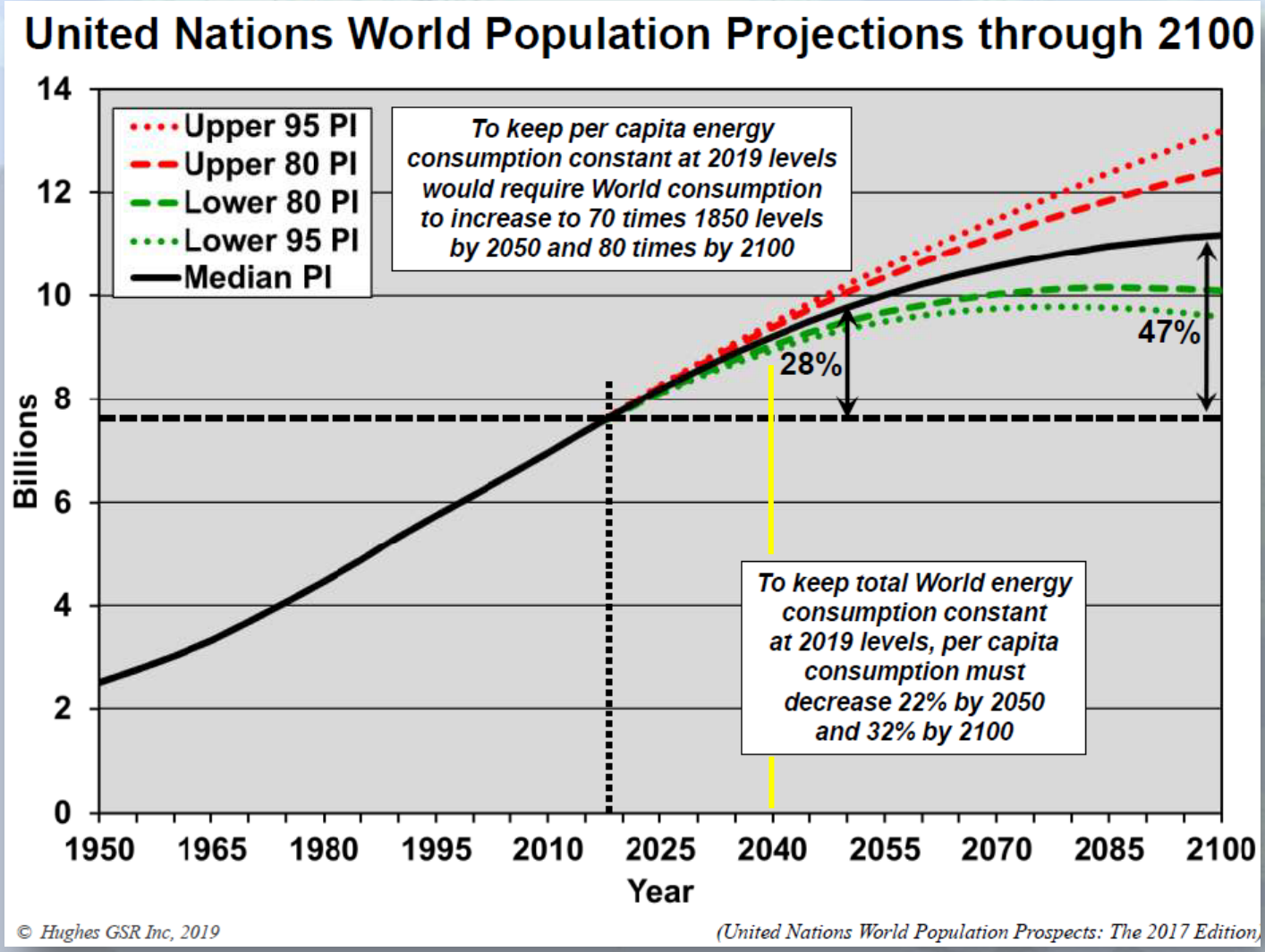


Need for energy



Increasing production from ultra deepwater environments

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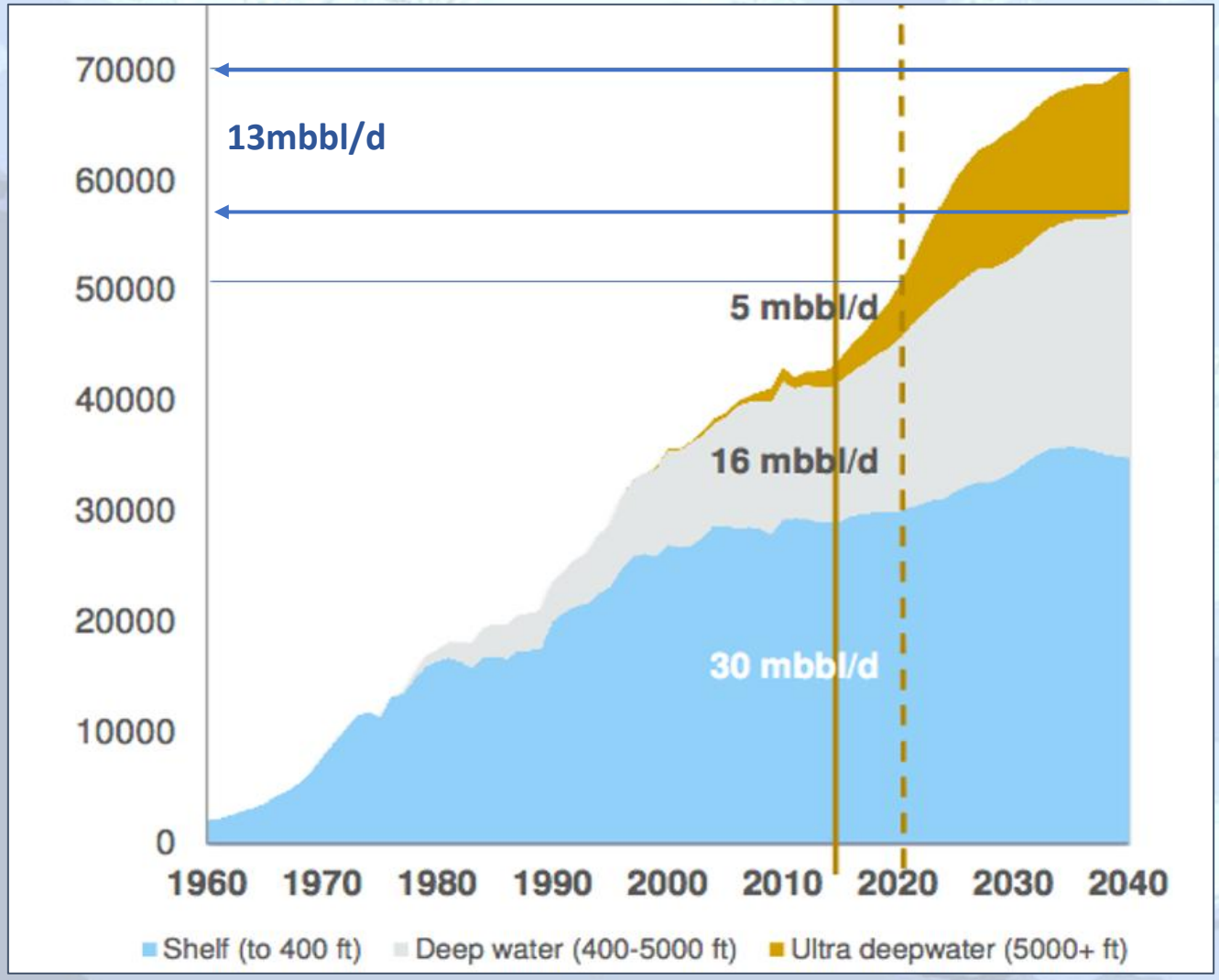

Improvement of drilling technology with increasing water depth

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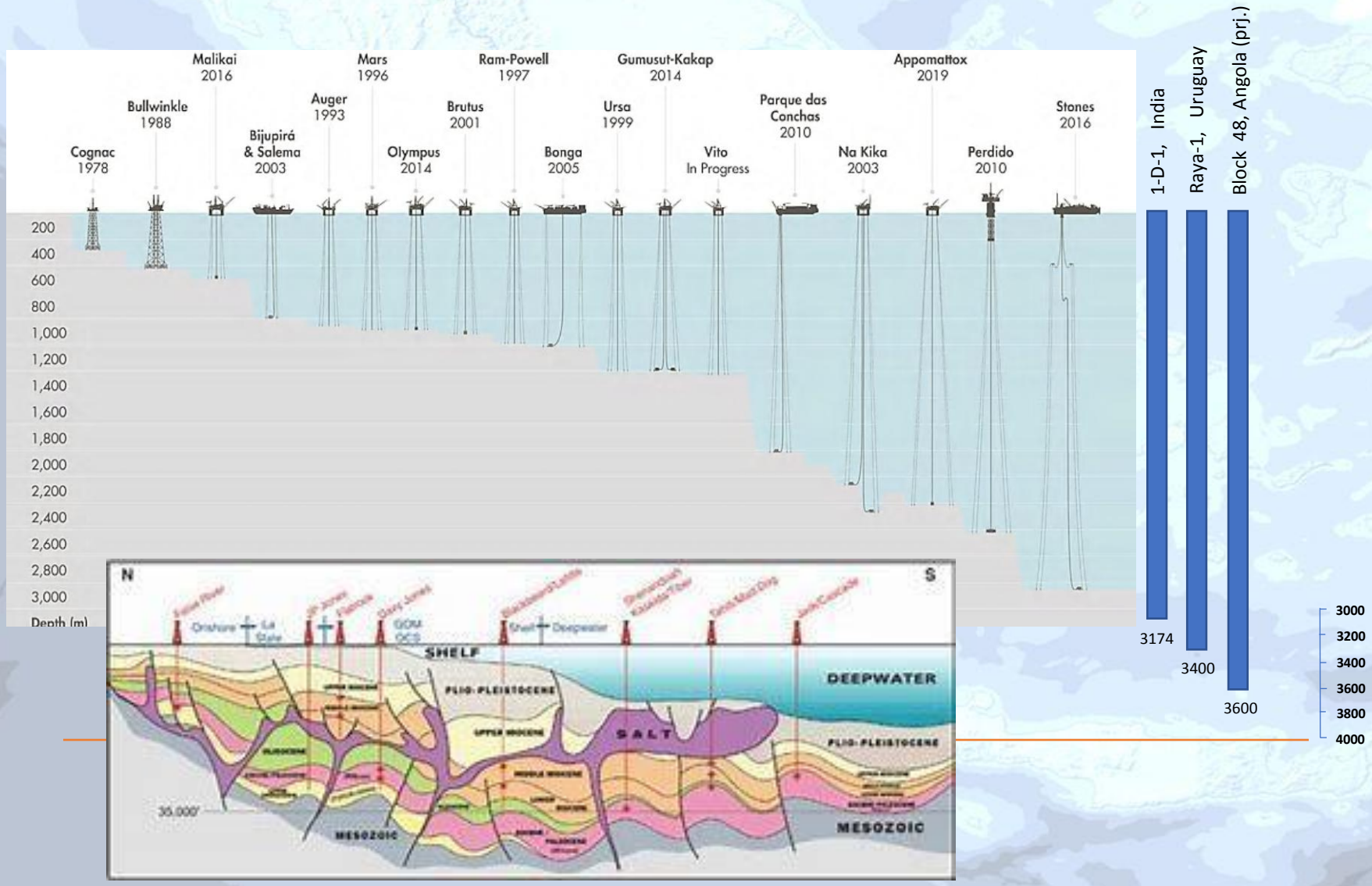

Ultradeep waters

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Challenges

- Pore pressure, fracture gradient, pressure window
- Shallow well sections
- Deep well sections
- Salt Drilling
- Tar deposits
- HPHT
- Number of casings
- Well control issues
- Rig and equipment issues
- BOP issues and limitations

Technologies

- Enhanced topsides facilities, improved hulls, stronger moorings and risers
- Advanced subsurface tools and monitoring equipment
- Improved modelling tools for safer vessel designs from explosion hazards and violent sea events
- Development of “next generation” metocean and meteorological predictive techniques

When midstream and upstream meet

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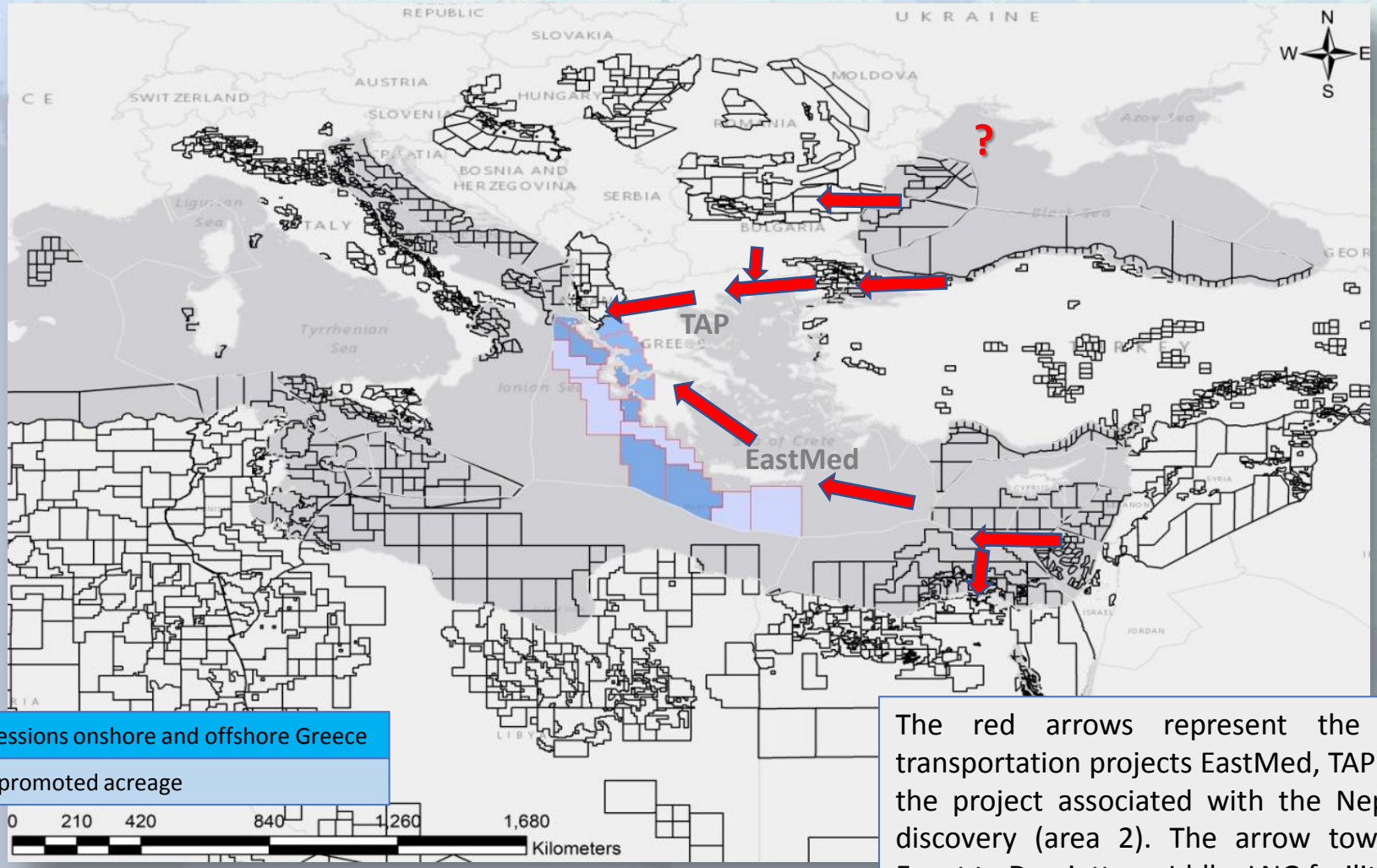

Concessions onshore and offshore Greece

New promoted acreage

The red arrows represent the gas transportation projects EastMed, TAP and the project associated with the Neptun discovery (area 2). The arrow towards Egypt to Damietta or Iddku LNG facilities.

PIPELINE versus LNG : Dilemma or complementarities

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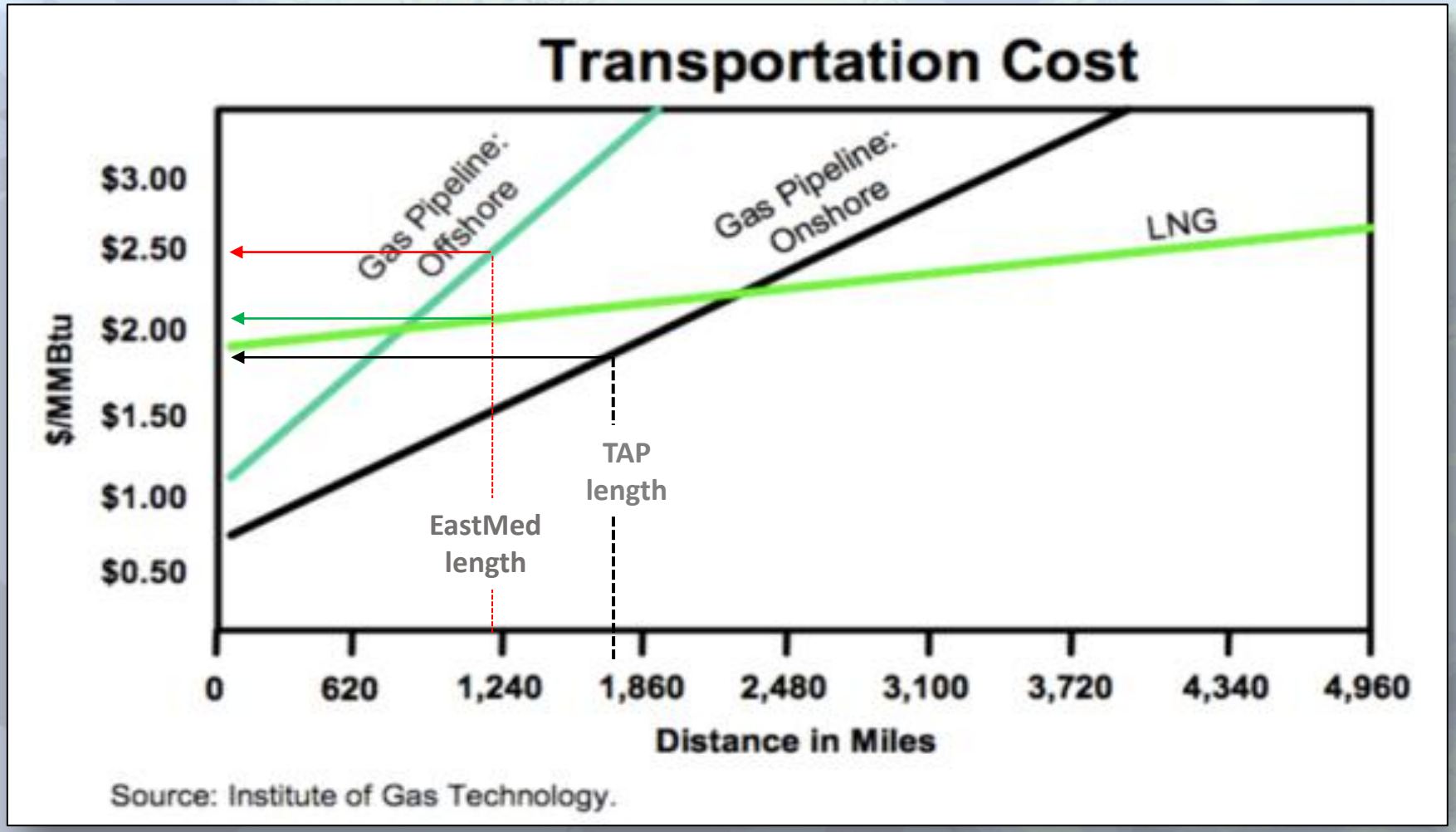

Status of gas transportation infrastructures

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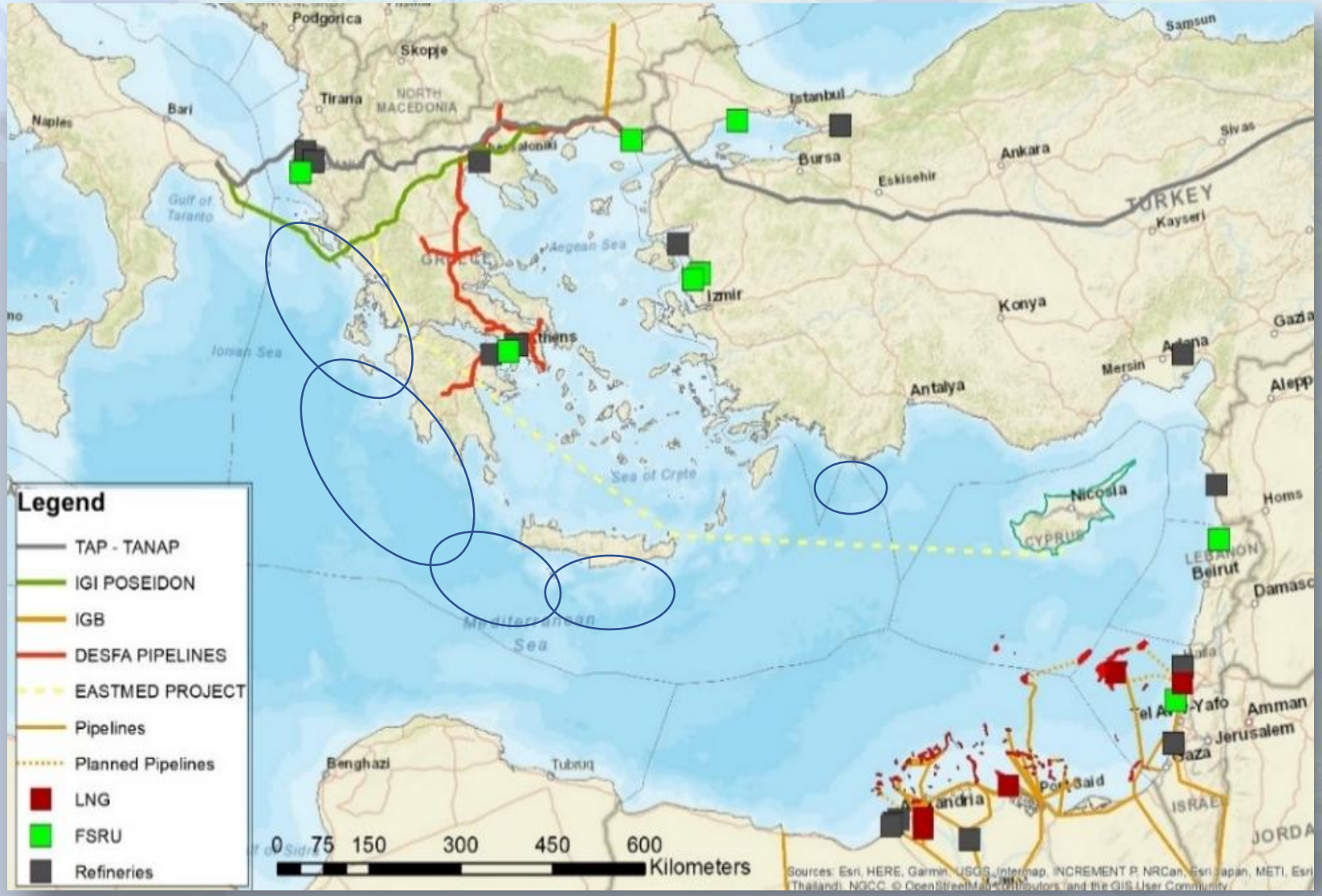

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